

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
31 July 2003 (31.07.2003)

PCT

(10) International Publication Number
WO 2003/063093 A3

(51) International Patent Classification⁷: G06K 9/00, G07C 9/00, G06F 3/033

(21) International Application Number: PCT/GB2003/000125

(22) International Filing Date: 15 January 2003 (15.01.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 0201232.6 19 January 2002 (19.01.2002) GB

(71) Applicant (for all designated States except US): QUEEN MARY AND WESTFIELD COLLEGE [GB/GB]; University of London, London E1 4NS (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): MCOWAN, Peter, William [GB/GB]; Department of Computer Science, Queen Mary University of London, Mile End Road, London E1 4NS (GB). EVERITT, Ross, Alec, Joseph

(74) Agents: MARKS & CLERK et al.; 4220 Nash Court, Oxford Business Park South, Oxford, Oxfordshire OX4 2RU (GB).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

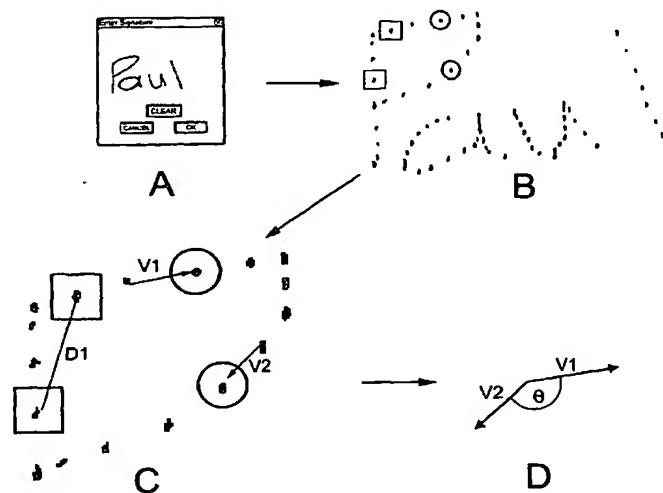
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: AUTHENTICATION SYSTEMS



(57) Abstract: An authentication system is provided for authenticating a user's signature as electronically inputted into the system by a mouse or other manual input device providing an output indicative of its location when manipulated by the user. The system serves to extract angle and distance data relating different parts of the user's signature inputted into the system, and to store corresponding angle and distance data relating to a reference signature as previously inputted into the system during a training procedure. The extracted data is then compared by the system to the reference data stored by the system, and, where appropriate an output indicative of an appropriate match between the inputted signature and the reference signature is provided in dependence on the result of the comparison. Such a system provides an on-line dynamic biometric verification system that can be customised to multiple Internet based applications requiring secure authentication. The system requires no specialised equipment at the point of use, allowing access from any Internet capable computer with a mouse and Java compliant browser for example.

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— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

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(88) Date of publication of the international search report:
26 February 2004

INTERNATIONAL SEARCH REPORT

Internal	Application No
PCT/	03/00125

A. CLASSIFICATION OF SUBJECT MATTER		
IPC 7	G06K9/00	G07C9/00
		G06F3/033

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F G06K G07C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 208 756 B1 (SUZUKI TOSHIRO) 27 March 2001 (2001-03-27) column 3, line 52 -column 4, line 12 column 4, line 38 -column 5, line 7 figures 1-3,4A,4B	1-7
Y	US 4 805 222 A (YOUNG JAMES R ET AL) 14 February 1989 (1989-02-14) column 2, line 27 -column 3, line 15 column 10, line 35 -column 11, line 59 figures 6-14	8-14
Y	US 4 805 222 A (YOUNG JAMES R ET AL) 14 February 1989 (1989-02-14) column 2, line 27 -column 3, line 15 column 10, line 35 -column 11, line 59 figures 6-14	8-11,14
A	column 2, line 27 -column 3, line 15 column 10, line 35 -column 11, line 59 figures 6-14	1
X	EP 0 889 433 A (MITSUI HIGH TEC) 7 January 1999 (1999-01-07) page 6, line 9 -page 7, line 21 page 10, line 50 -page 11, line 38 figures 6-9,15,16	1-6
Y	page 6, line 9 -page 7, line 21 page 10, line 50 -page 11, line 38 figures 6-9,15,16	13
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Further documents are listed in the continuation of box C.

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Date of the actual completion of the international search

8 December 2003

Date of mailing of the international search report

17/12/2003

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel: (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Paraf, E

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 03/00125

C(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	FR 2 684 469 A (THOMSON CSF) 4 June 1993 (1993-06-04)	12
A	column 2, line 16 -column 3, line 8 column 4, line 28 -column 5, line 11 page 13, line 16 - line 27; figures	1
A	US 6 111 976 A (RYLANDER JOHN E) 29 August 2000 (2000-08-29) column 3, line 16 - line 23 column 4, line 23 - line 52 column 5, line 44 -column 6, line 65 figures 1,3,4,6	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/EP 03/00125

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 6208756	B1	27-03-2001	JP JP	3192468 B2 5298490 A		30-07-2001 12-11-1993
US 4805222	A	14-02-1989	AU BE CH CN DE DK ES FI FR GB IT JP NL NO SE	6690986 A 905962 A1 668844 A5 86108645 A 3642614 A1 624386 A 2003996 A6 865153 A 2592195 A1 2184576 A 1235762 B 62157966 A 8603272 A 865224 A 8605446 A		25-06-1987 16-04-1987 31-01-1989 19-08-1987 25-06-1987 24-06-1987 01-12-1988 24-06-1987 26-06-1987 24-06-1987 28-09-1992 13-07-1987 16-07-1987 24-06-1987 24-06-1987
EP 0889433	A	07-01-1999	JP JP JP JP AU CA EP US	3140989 B2 11025225 A 3139701 B2 11025226 A 5270698 A 2224540 A1 0889433 A2 6144764 A		05-03-2001 29-01-1999 05-03-2001 29-01-1999 04-02-1999 02-01-1999 07-01-1999 07-11-2000
FR 2684469	A	04-06-1993	FR	2684469 A1		04-06-1993
US 6111976	A	29-08-2000	US	5917486 A		29-06-1999